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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of ITAAC 3.3.00.02a.i.a [Index Number 760]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 3.3.00.02a.i.a [Index Number 760]. This ITAAC verified that a report exists and concludes that the as-built containment internal structures, including critical sections, conform to the approved design with deviations reconciled such that it will withstand design basis loads without loss of structural integrity, safety-related functions, and radiation protection. The closure process for this ITAAC is based on the guidance described in NEI 08-01, Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52, which was endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,

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Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 3.3.00.02a.i.a [Index Number 760]

JMC/TL/sfr

cc: Regional Administrator, Region ll
Director, Office of Nuclear Reactor Regulation (NRR)
Director, Vogtle Project Office NRR
Senior Resident Inspector – Vogtle 3 & 4

Southern Nuclear Operating Company
ND-22-0695
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 3.3.00.02a.i.a [Index Number 760]

ITAAC Statement

Design Commitment

2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.

3.) Walls and floors of the nuclear island structures as defined on Table 3.3-1 except for designed openings or penetrations, provide shielding during normal operations.

Inspections, Tests, Analysis

i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads, and for radiation shielding.

Acceptance Criteria

i.a) A report exists which reconciles deviations during construction, including Table 3.3-1 wall and floor thicknesses, and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

ITAAC Determination Basis

Multiple ITAAC were performed to demonstrate that the Nuclear Island (NI) structures, including the critical sections listed in VEGP Unit 4 Combined License (COL) Appendix C (Reference 1) Table 3.3-7 (Attachment A), are seismic Category I and were designed and constructed to withstand design basis loads as specified in the VEGP Unit 3&4 COL Appendix C Section 3.3 Design Description, without loss of structural integrity and the safety-related functions. In addition, multiple ITAAC were performed on walls and floors of the NI structures as defined on Table 3.3-1 (Attachment B) except for designed openings or penetrations, that provide radiation shielding during normal operations.

The subject ITAAC performed inspections of the as-built containment building internal structures, including the critical sections and Table 3.3-1 wall and floor thicknesses, and reconcilied deviations during construction to the approved design such that the as-built structures will withstand design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

Design bases loads are defined in VEGP Unit 4 COL Appendix C Section 3.3 as those loads associated with:

- Normal plant operation (including dead loads, live loads, lateral earth pressure loads, and equipment loads, including hydrodynamic loads, temperature and equipment vibration);

- External events (including rain, snow, flood, tornado, tornado generated missiles and earthquake); and
- Internal events (including flood, pipe rupture, equipment failure, and equipment failure generated missiles).

VEGP 3&4 Updated Final Safety Analysis Report (Reference 2), Section 3.7 "Seismic Design", Section 3.8 "Design of Category I Structures", and Appendix 3H "Auxiliary and Shield Building Critical Sections" describe the analyses for the design basis loads for the NI Structures. Section 3.8 specifies the applicable codes and standards governing the design, materials, fabrication, construction inspection and testing for the Nl structures. Section 3.8 also describes the as-built design summary reports which document that the seismic Category I structures meet the specified acceptance criteria.

Radiation zone and equipment qualification requirements were met in accordance with VEGP 3&4 UFSAR Tier 2 design criteria including UFSAR Subsections 3.11.4 “Estimated Radiation and Chemical Environment,” 3D.5.1.2 “Radiation Dose,” and 12.3.2.1 “Shielding, Design Objectives”.

The containment internal structures, including the critical sections, listed in Attachment A, and walls and floors of the NI structures as defined on Table 3.3-1 (Attachment B) except for designed openings or penetrations, provide radiation shielding during normal operations and were constructed as designed and specified in the VEGP Unit 4 COL Appendix C Section 3.3 Design Description to withstand the Design Description design basis loads without loss of structural integrity and the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

The containment internal structures, including the critical sections, listed in Attachment A, and walls and floors of the NI structures as defined on Table 3.3-1 (Attachment B), except for designed openings or penetrations, which provide radiation shielding during normal operations were inspected during construction to verify the as-built structures conform to the specified design, codes and standards. Construction identified structural deviations were documented, evaluated, and reconciled by engineering to confirm the structures' ability to withstand design basis loads without impacting compliance with the radiation protection licensing basis. The Vogtle Unit 4 As-Built Summary Report: Containment Internal Structures and Modules (Reference 3) and Vogtle Unit 4 As-Built Summary Report: Nuclear Island Basemat (Reference 4), exist and document the reconciliation of Nl structural deviations identified during construction and conclude that the as-built containment internal structures, including the critical sections and walls and floors of the NI structures as defined on Table 3.3-1 except for designed openings or penetrations, will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions, and without impacting compliance with the radiation protection licensing basis.

References 3 and 4 are available for NRC inspection as part of the Unit 4 ITAAC 3.3.00.02a.i.a Completion Package (Reference 5).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all ITAAC findings pertaining to the subject ITAAC and

associated corrective actions. This review found that there are nine (9) relevant ITAAC NRC findings associated with this ITAAC.

1. 05200026/2015002-01 (Closed)
2. 05200026/2016004-01 (Closed)
3. 05200026/2017001-01 (Closed)
4. 99901439/2015-201-01 (Closed)
5. 99901439/2015-201-02 (Closed)
6. 99901439/2014-201-01 (Closed)
7. 99901425/2014-201-01 (Closed)
8. 99901419/2012-201-03 (Closed)
9. 99901409/2011-201-03 (Closed)

The corrective actions for each finding have been completed and each finding is closed. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 3.3.00.02a.i.a (Reference 5) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 3.3.00.02a.i.a was performed for VEGP Unit 4 and that the prescribed acceptance criteria were met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. VEGP Unit 4 COL Appendix C, Amendment 191
2. VEGP 3&4 UFSAR, Revision 11.2
3. SV4-1100-GCR-001, Rev. 0 Vogtle Unit #4 As-Built Summary Report: Containment Internal Structures and Modules.
4. SV4-1010-GCR-001, Rev. 1 Vogtle Unit #4 As-Built Summary Report: Nuclear Island Basemat.
5. 3.3.00.02a.i.a-U4-CP-Rev1, ITAAC Completion Package
6. NEI 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52".

Attachment A: *Excerpt of COL Appendix C Table 3.3-7

Table 3.3-7 ***Nuclear Island Critical Structural Sections**
Containment Internal Structures
South west wall of the refueling cavity
South wall of the west steam generator compartment
North east wall of the in-containment refueling water storage tank
In-containment refueling water storage tank steel wall
Column supporting the operating floor

Attachment B: *Excerpt of COL Appendix C Table 3.3-1

Table 3.3-1 **Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building(1)**				
***Wall or Section Description**	***Column Lines(7)**	***Floor Elevation or Elevation Range(7)(8)**	***Concrete Thickness(2)(3)(4)(5)(9)(18)**	***Applicable Radiation Shielding Wall (Yes/No)**
Containment Building Internal Structure(15)*				
Shield Wall between Reactor Vessel Cavity and RCDT Room	E-W wall parallel with column line 7 (Inside face is 3'-0" north of column line 7. Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 71'-6" to 83'-0"	3'-0"(10)	Yes
West Reactor Vessel Cavity Wall	N-S wall parallel with column line N (Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 83'-0" to 98'-0"	7'-6" (10)	Yes
North Reactor Vessel Cavity Wall	E-W wall parallel with column line 7 (Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 83'-0" to 98'-0"	9'-0"(10)	Yes

Attachment B: *Excerpt of COL Appendix C Table 3.3-1

Table 3.3-1
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building(1)

*Wall or Section Description	*Column Lines(7)	*Floor Elevation or Elevation Range(7)(8)	*Concrete Thickness(2)(3)(4)(5)(9)(18)	*Applicable Radiation Shielding Wall (Yes/No)
Containment Building Internal Structure(15)*				
East Reactor Vessel Cavity Wall	N-S wall parallel with column line N (Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 83'-0" to 98'-0"	7'-6"(10)	Yes
West Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
North Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
East Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
South Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
South wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes
West wall of west steam generator compartment	N-S wall parallel with column line N	From 103'-0" to 153'-0"	2'-6"	Yes
North wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes
South wall of pressurizer compartment	Not Applicable	From 103'-0" to 153'-6"	2'-6"	Yes
West wall of pressurizer compartment	N-S wall parallel with column line N	From 107'-2" to 160'-0"	2'-6"	Yes

Attachment B: *Excerpt of COL Appendix C Table 3.3-1

Table 3.3-1
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building(1)

*Wall or Section Description	*Column Lines(7)	*Floor Elevation or Elevation Range(7)(8)	*Concrete Thickness(2)(3)(4)(5)(9)(18)	*Applicable Radiation Shielding Wall (Yes/No)
Containment Building Internal Structure(15)*				
North wall of pressurizer compartment	E-W wall parallel with column line 7	From 107'-2" to 160'-0"	2'-6"	Yes
East wall of pressurizer compartment	N-S wall parallel with column line N	From 118'-6" to 160'-0"	2'-6"	Yes
North-east wall of in-containment refueling water storage tank	Parallel to column line N	From 103'-0" to 135'-3"	2'-6"	Yes
West wall of in-containment refueling water storage tank	Not Applicable	From 103'-0" to 135'-3"	5/8" steel plate with stiffeners	Yes
South wall of east steam generator compartment	Not Applicable	From 87'-6" to 153'-0"	2'-6"	Yes
East wall of east steam generator compartment	N-S wall parallel with column line N	From 94'-0" to 153'-0"	2'-6"	Yes
North wall of east steam generator compartment	Not Applicable	From 87'-6" to 153'-0" with a 158'-0" portion	2'-6"	Yes

Attachment B: *Excerpt of COL Appendix C Table 3.3-1

1. The column lines and floor elevations are identified and included on Figures 3.3-1 through 3.3-13.
2. These wall (and floor) thicknesses have a construction tolerance of ± 1 inch, except as noted and for exterior walls below grade where the tolerance is +12 inches, - 1 inch. These tolerances are not applicable to the nuclear island basemat.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates. Where faceplates with a nominal thickness of 0.5 inches are used in the construction of the wall modules, the wall thicknesses in this column apply. Where faceplates thicker than the nominal 0.5 inches are used in the construction of the structural wall modules, the wall thicknesses in the area of the thicker faceplates are greater than indicated in this column by the amount of faceplate thickness increase over the nominal 0.5 inches. Overlay plates are not considered part of the faceplates, and thus are not considered in the wall thicknesses identified in this column.
4. For floors with steel surface plates, the concrete thickness also includes the plate thickness.
5. Where a wall (or a floor) has openings, the concrete thickness does not apply at the opening.
6. N/A to ITAAC 3.3.00.02a.i.a.
7. The Wall or Section Description, Column Line information, and Floor Elevation or Elevation Ranges are provided as reference points to define the general location. The concrete thickness of an item intersecting other walls, roofs or floors at a designated location (e.g., column line) is not intended to be measured to the stated column line, but only to the point where the intersection occurs.
8. Where applicable, the upper wall portions extend to their associated roofs, which may vary in elevation, e.g., sloped roofs.
9. From one wall/floor section to another, the concrete thickness transitions from one thickness to another, consistent with the configurations in Figures 3.3-1 through 3.3-14.
10. N/A to ITAAC 3.3.00.02a.i.a.
11. N/A to ITAAC 3.3.00.02a.i.a.
12. N/A to ITAAC 3.3.00.02a.i.a.
13. N/A to ITAAC 3.3.00.02a.i.a.
14. N/A to ITAAC 3.3.00.02a.i.a.
15. Reconciliation of construction deviations in the nuclear island structures from the thickness and tolerances specified in this table is included in the reconciliation reports, and demonstrate that the as-built structures will withstand design basis loads without loss of structural integrity or safety functions and without impacting compliance with the radiation protection licensing basis, such as GDC 19, established radiological zoning and equipment qualification in accordance with ITAAC 3.3.00.02a.i.a, 3.3.00.02a.i.b, 3.3.00.02a.i.c, or 3.3.00.02a.i.d.
16. N/A to ITAAC 3.3.00.02a.i.a.
17. N/A to ITAAC 3.3.00.02a.i.a.
18. Nonconformances from the thicknesses and tolerances specified in Table 3.3-1 (i.e. out of tolerance conditions) are addressed under the 10 CFR Part 50, Appendix B process and subsequently are screened in accordance with the 10 CFR Part 52, Appendix D, Section VIII process, to ensure that the licensing basis is adequately maintained. Construction deviations will continue to be assessed against the licensing basis requirements and will be addressed in accordance with licensee procedures and regulatory requirements and, if applicable, a license amendment will be obtained prior to implementation of the change.